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VERIFICATION OF A TRANSLATION

I, Elisabeth Ann LUCAS,

Director of RWS Group Ltd, of Europa House, Marsham Way, Gerrards Cross, Buckinghamshire, England declare:

That the translator responsible for the attached translation is knowledgeable in the German language in which the below identified international application was filed, and that, to the best of RWS Group Ltd knowledge and belief, the English translation of the amended sheets of the international application No. PCT/EP2003/011593 is a true and complete translation of the amended sheets of the above identified international application as filed.

I hereby declare that all the statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the patent application issued thereon.

Date: February 8, 2005

Signature :

For and on behalf of RWS Group Ltd

Post Office Address : Europa House, Marsham Way,
Gerrards Cross, Buckinghamshire,
England.

11.10.04

Claims

1. A method of fastening a tool (22) in a tool chuck (20), in which an actual position of the tool (22), in particular in the direction of the longitudinal axis of the tool (22), is determined by measurement, the tool (22) is then inserted into the tool chuck (20), positioned there and shrunk in place, and the actual position of the tool (22) in the tool chuck (20) is determined after the shrink fitting, characterized in that the positioning is effected on the basis of the actual position determined.

2. The method as claimed in claim 1, characterized in that the actual position of the tool (22) is monitored during the insertion of the tool (22) into the tool chuck (20).

3. The method as claimed in claim 1 or 2, characterized in that, during the shrink fitting, the tool (22) is held by a tool gripper (40) which has also held the tool (22) during the measuring.

4. The method as claimed in one of the preceding claims, characterized in that the tool chuck (20) is fastened in a spindle (18) during the shrink fitting and is not removed from the spindle (18) until after the actual position has been determined.

5. The method as claimed in one of the preceding claims, characterized in that a number of tools (22) are shrunk in place in a respective associated tool chuck (20) and are deposited together with the tool chuck (20) in a loading and unloading magazine (24), and then the actual position of the tools (22) in the tool chucks (20) is determined.

6. The method as claimed in one of the preceding claims, characterized in that the tool (22) is positioned in the tool chuck (20) at a distance from the desired position corresponding to a correction size.

7. The method as claimed in one of the preceding claims, characterized in that the position is written to a data carrier, connected to the tool chuck (20), after the actual position has been determined.

8. The method as claimed in one of the preceding claims, characterized in that a traverse path for moving the tool (22) from the actual position determined into the tool chuck (20) is determined from the actual position.

9. The method as claimed in one of the preceding claims, characterized in that the actual position is determined in a non-contact manner.

10. The method as claimed in one of the preceding claims, characterized in that the actual position is determined via the actual position of an element from the group comprising cutting edge, corner, edge and tip.

11. The method as claimed in one of the preceding claims, characterized in that the actual position of

the tool (22) is defined with regard to a reference point on the tool chuck (20).

12. The method as claimed in, characterized in that the tool (22), before the determination of the actual position, is rotated about a rotation axis (16) outside the tool chuck (20) in front of an optical measuring system (8).

13. The method as claimed in one of the preceding claims, characterized in that the tool (22) is held by a tool gripper (40) during the measuring.

14. The method as claimed in claim 13, characterized in that the tool (22), for the measuring, is held concentrically to a rotation axis (16) of the spindle (18).

15. The method as claimed in claim 13 or 14, characterized in that the tool gripper (40) is able to rotate the tool (22) about its rotation axis (16).

16. The method as claimed in one of the preceding claims, characterized in that the actual position is determined in the radial direction relative to a tool axis after the shrink fitting.

17. The method as claimed in one of the preceding claims, characterized in that an unintentional movement of the tool (22) during the insertion is detected.

18. The method as claimed in one of the preceding claims, characterized in that the actual position is determined immediately after the shrink fitting.

19. The method as claimed in claim 18, characterized in that the actual position determined immediately after the shrink fitting is compared with a

subsequently determined actual position after the tool chuck (20) has cooled down.

20. The method as claimed in one of the preceding claims, characterized in that the tool chuck (20) is heated for the shrink fitting and the temperature of the tool chuck (20) is monitored by means of a sensor before the positioning of the tool (22).

21. The method as claimed in one of the preceding claims, characterized in that the tool chuck (20) is mounted in a spindle (18) rotatable about a rotation axis (26).

22. The method as claimed in one of the preceding claims, characterized in that the loading and unloading magazine is designed to be rotatable about a rotation axis (26).

23. The method as claimed in one of the preceding claims, characterized in that the tool (22) is positioned in front of or in a cooling station by rotation of the loading and unloading magazine.